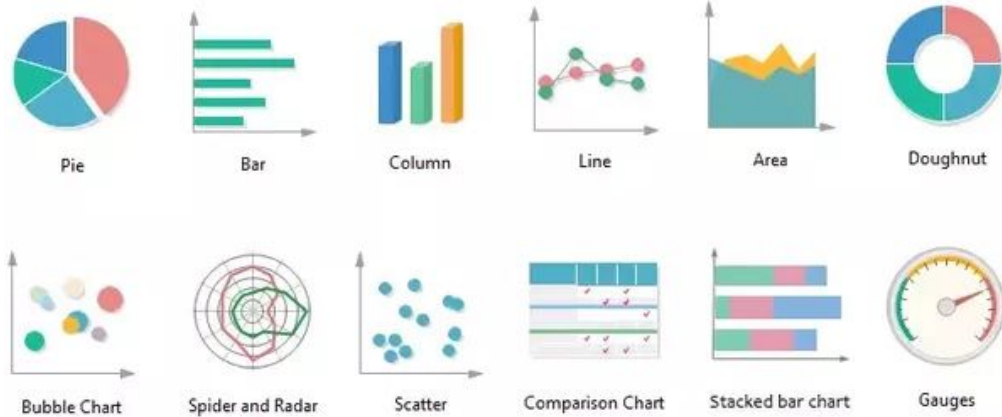


Lesson 1.2

Types of Graphs

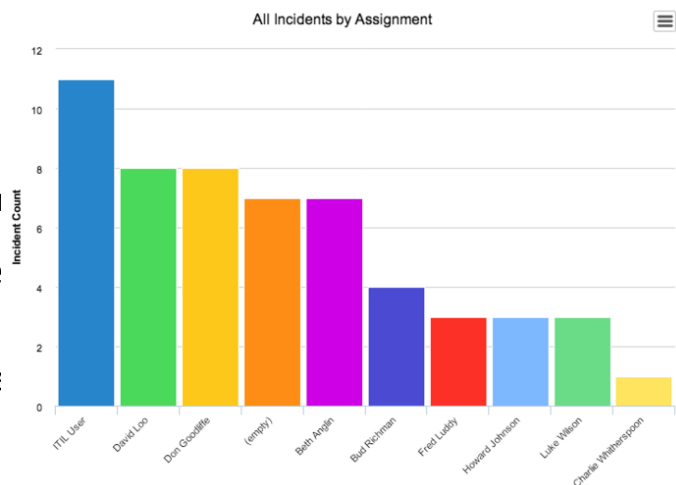


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Types of Graphs - Bar Graph

A **bar graph** is a visual representation used to show comparison. On a bar graph, the bars can be horizontal or vertical as shown on the right. Most bar graphs are drawn with vertical bars. The values plotted are discrete, meaning they have a distinct or exact value. There is always the same amount of space between the bars and the bars are always the same thickness.

Used for Discrete Data

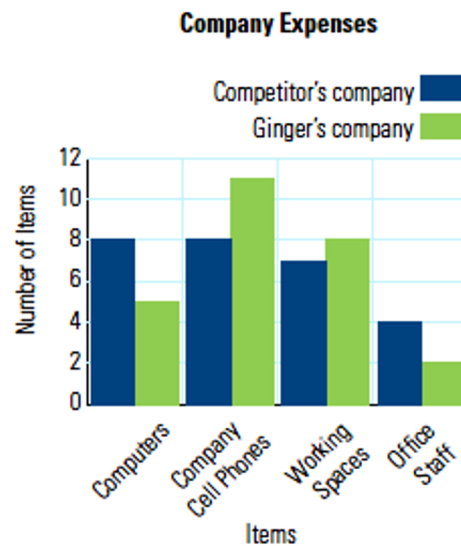


29

Types of Graphs – Double Bar Graph

A **double bar graph** is used to compare two things and show the trends between both at the same time. Double bars graphs have everything the same as single bar graphs except they have two bars at each spot on the horizontal axis comparing some entity. Drawing double bars graphs follows the same set of rules as for single bar graphs.

Used for Discrete Data

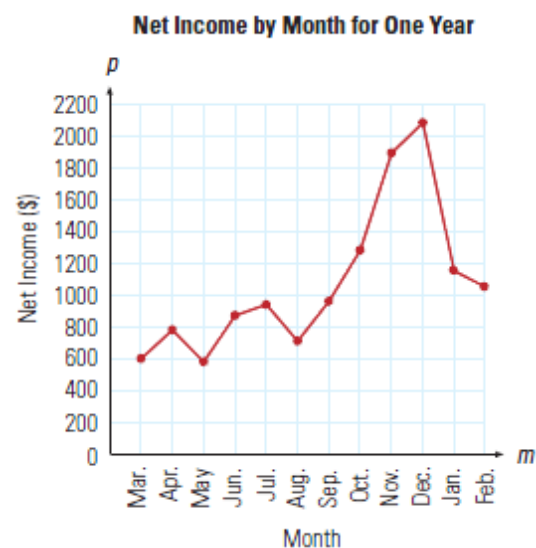


30

Types of Graphs – Broken-Line Graph

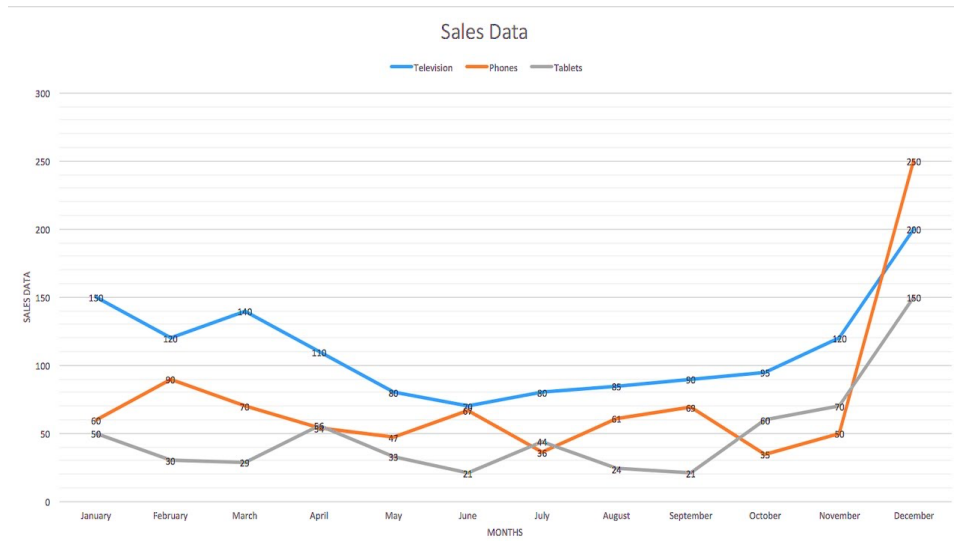
A **broken line graph** are used to show trends over time and is similar to a bar graph, but it has points at the top of where the bars would be. These points are joined in individual line segments creating a “broken” line. By looking at just the line on a broken line graph rather than a set of bars on a bar graph, it is easier to discover the changes in the data over time. As with double bar graphs, broken line graphs can have more than one broken line on a graph.

Used for Discrete or Continuous Data



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Types of Graphs – Broken-Line Graph

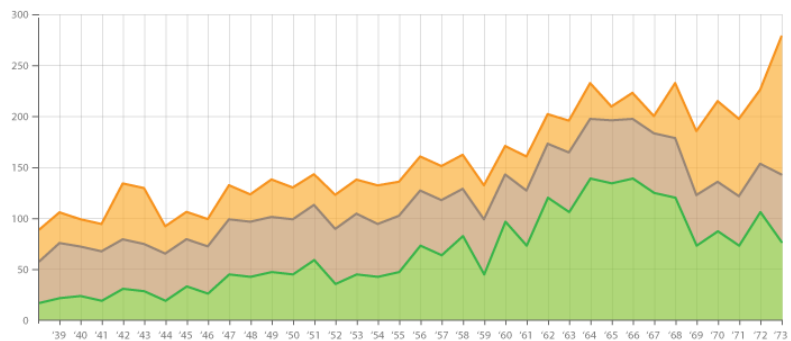


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Types of Graphs - Area Graph

An **area graph** is based on the broken-line graph, but with the area between axis and line emphasized with colors, textures and hatchings to create a more powerful visual effect. Commonly one compares two or more quantities with an area chart.

**Used Used for
Discrete or
Continuous Data**



33

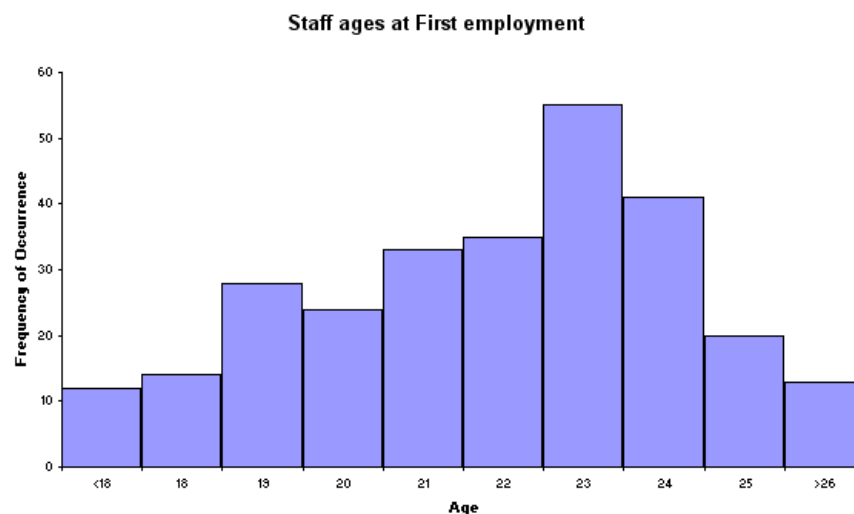
Types of Graphs - Histogram

The **histogram**, also called a **frequency distributions graph**, is a special type of bar graph. It shows a range of continuous data on the horizontal axis grouped into what are called classes. There is no space between the bars of a histogram because the data is continuous, and the width of each bar that represents the classes is the same. Individual data points are grouped together in classes to show the frequency of data within each class. Histograms can be used to show how a measured class is distributed along a measured variable. These graphs are typically used, for example, to check if a variable follows a normal distribution.

Used for Continuous Data

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Types of Graphs - Histogram

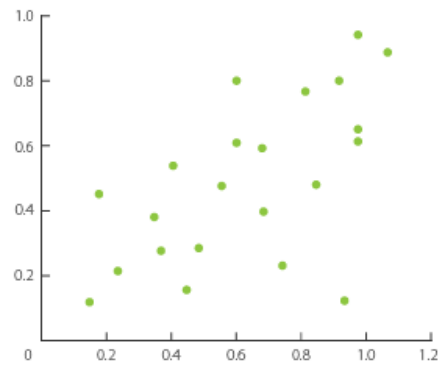
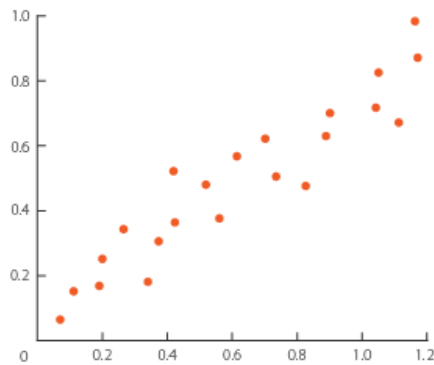


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Types of Graphs - Scatterplot

A **scatterplot** is used to show the relationship between two variables and whether their values change in a consistent way.

Used for Continuous Data



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Types of Graphs - Pie Chart

A **pie chart** or **circle graphs** shows categories or groups of data in relation (i.e. relative proportion) to the whole data set. The entire pie represents all the data, while each slice or segment represents a different category or group within the whole. Each slice should show significant variations. The number of categories should be generally limited to between 3 and 10.



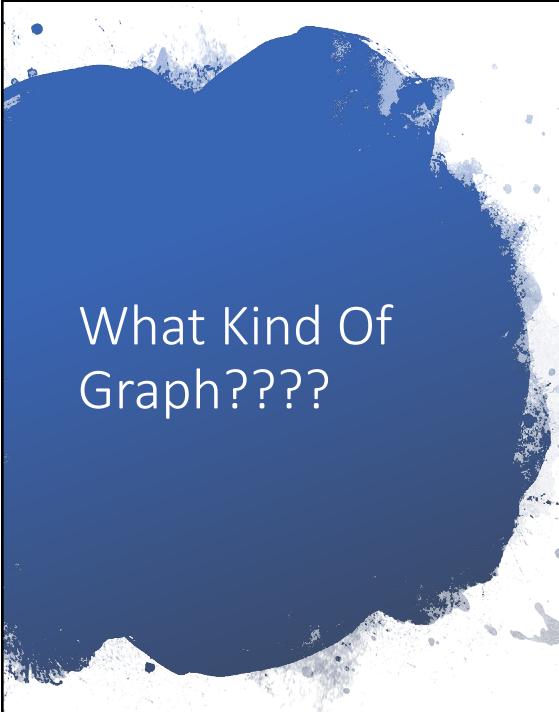
Used for Discrete Data

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Summary - Types of Graphs

- **Bar Graph** – Used to compare groups/categories of things to each other (e.g. Precipitation each month in Revelstoke) **Discrete Data**
- **Double Bar Graph** – Used to compare two groups/categories to one another (e.g. Precipitation each month in Revelstoke and Vancouver) **Discrete Data**
- **Broken-Line Graph** – Used to compare how a quantity changes over some fixed quantity (i.e. time, units, distance, etc...) (e.g. temperature in Revelstoke every hour) **Discrete or Continuous Data**
- **Double broken-Line Graph** – Used to compare two different quantities to one another over some fixed quantity (e.g. Annual CO₂ emissions between Canada and the United States) **Discrete or Continuous Data**
- **Histogram** – Used to compare the distribution of data within a certain class. **Continuous**
- **Circle Graph** – Used to compare the relation of items to the whole or total. **Discrete**
- **Scatterplot** – used to compare the relationship between two variables. **Continuous**

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What Kind Of Graph???

- Tree height over time?
- Movie preference by grade level?
- Comparing surface area vs volume of an object?
- How you spend your monthly paycheck?
- Body height of students by age & gender?
- Unemployment rate in Canada by Province?
- Monthly average temperature & Precipitation?
- Number of Ford models sold over the past 5 years?

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A graphic for an assignment slide. It features a large, dark blue, irregular shape on the left side, resembling a splash or a cloud. The word "Assignment" is written in white, sans-serif font across the middle of this blue shape. To the right of the blue shape, the text "Complete Assignment 1.2 – What Type of Data and Graph" is written in a smaller, black, sans-serif font. The entire graphic is enclosed in a thin black rectangular border.

Assignment

Complete Assignment 1.2 – What Type of Data and Graph